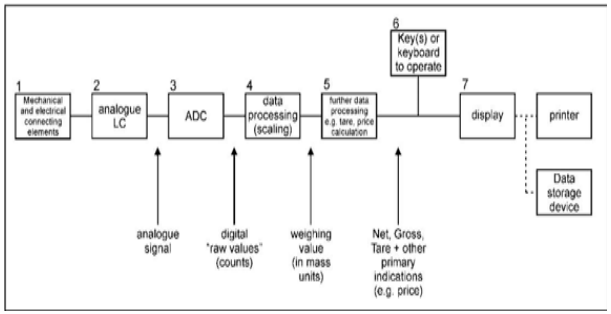
OIML TC9/SC1, Revision R76

Synopsis of Comments on the 1st Committee Draft (17 December 2004) and Secretariat's Responses

No. of R76-1	Country	Comments	Response of TC9/SC1 Secretariat
General	US	Note: 1. All changes in 1 CD against R76-1 (1992) are marked red 2. All changes in 1 CD against Working Draft Revision (2003) are marked with blue background 3. Language and amendments proposed by the U.S. are marked with yellow background.	OK
Answer to B.1	US	The U.S. agrees that criteria is needed for digital data processing devices either as a separate Annex or combined with Annex C. A combined Annex C could be titled as shown below to clarify that applicable requirements in Annex C, clause C1 are equivalent for both digital and analog data processing devices. This would include interfaces, connectable devices, and descriptive markings and control marks: ANNEX C TESTING AND CERTIFICATION OF INDICATORS**, DIGITAL DATA PROCESSING DEVICES,** AND ANALOG PROCESSING DEVICES AS MODULES OF NON-AUTOMATIC WEIGHING INSTRUMENTS	
Answer to B.2	US	The U.S. believes that the introductory note proposed under B.3.3 "Surge" ***not*** be kept unless additional language is developed to distinguish between instruments that have and have not been tested for "surge." Similar language has been included in the humidity marking requirements in OIML R 60. Additionally, attempting to specify conditions where surge testing is needed is still subject to different interpretations. The U.S. suggests that conditions where surge testing is not needed, such as battery operated device and indoor installations where signal lines are shorter than 30 meters. The language from D11 sub clause 8.4.5 is similar to other examples of disturbances in D 11 clause 8.4. Severity levels.	P- We think that a special marking on the instrument is not adequate for the surge test, and that the information provided in the respective test report can be considered as sufficient. However, we have added under 8.2.1.2 No 7.3 the length of signal lines as a necessary information to be provided by the manufacturer.

No. of R76-1	Country	Comments	Response of TC9/SC1 Secretariat
T.1.2	US	The U.S. appreciates the earlier clarifications provided by the Secretariat on the definition of the additional "Note" of the term non-automatic weighing instrument. We believe that additional clarification is needed regarding the phrase "operator intervention during the weighing process." U.S. manufacturers and regulators have reported that they have difficulty in consistently determining the "automatic" or "non-automatic" status of weighing instruments that require operators to place objects on the load receptor of a weighing instrument. After the weight has been determined, the instrument automatically removes the object from the load receptor to be automatically wrapped and labelled. The technical experts in the U.S. are divided as how to classify these types of instruments (automatic or non-automatic). The U.S. offers the following to clarify that the instrument in the above example is not an automatic weighing instrument: T.1.2 Non-automatic weighing instrument Instrument that requires the intervention of an operator during the weighing process to decide that ~~it~~ the weighing result is acceptable. Note: Deciding that the weighing result is acceptable includes any intelligent action of the operator that affects the result, such as taking an action when an indication is stable or adjusting the weight of the weighed load, ~~it also includes~~ and to make a decision regarding the acceptance of each weighing result on observing the indication or releasing a print out. ~~The~~ A non-automatic weighing process allows the operator to take an action (i.e. adjust the load, adjust the unit price, determine that the load is acceptable, etc.) which influences the weighing result in the case where the weighing result is not acceptable. The necessity to give an instruction to start the weighing process, or release a load, or place the item to be weighed on the load receptor, or to change the function of the instrument (static, dynamic, automatic loading, automatic start of weighing, etc.) are not relevant in deciding the category of a non-automatic weighing instrument.	P+ See also ZA proposal P+ See Note 1 in 2CD P+ See Note 1 in 2CD P- Instead of this text, which would probably lead to misinterpretations, we propose a new Note 2 relating to the definition of AWIs (see 2CD, No T.1.2)

No. of R76-1	Country	Comments	Response of TC9/SC1 Secretariat
T.2.2	US	The U.S. supports the proposed amendments to T.2.2 and proposes a new term that consists of the combination of a load cell and the mechanical and electrical connecting elements be defined include the new term in T.2.2. Figure 1. Note that the combined effects of load cells and connecting elements are already established in Table 7. T.2.2.8. Weighing element (is there a better term?) The part of a weighing instrument that comprises all mechanical devices and load cells (i.e. load receptor, load-transmitting device, and analog or digital load cells). Figure 1 Definition of modules according to Terminology T.2.2 and 3.10.2  analogue load cell (T.2.2.1) 2 digital load cell (T.2.2.1) 2 + 3 + (4)*) Indicator (T.2.2.2) (3) + 4 + (5) + (6) + 7 analogue data processing device (T.2.2.3) 3 + 4 + (5) + (6) digital data processing device (T.2.2.4) 4 + (5) + (6) Terminal (T.2.2.5) (5) + 6 + 7 remote display (T.2.2.6) 7 weighing module (T.2.2.7) 1 + 2 + 3 + 4 + (5) + (6) weighing element (?) (T.2.2.8) 1 + 2 +(3)*) *) Numbers in brackets indicate options	We principally agree that this is a possible combination, but we rather suggest to introduce a more general term in the heading of Figure 1 (see response to FR proposal).

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3.4.2	US	The U.S. requests that language be added that clarifies **which part of the requirement does not apply to a Class I instrument with d < 1 mg, where e = 1 mg.** The following amendment to 3.4.2 represents the U.S. position about the exception language. 3.4.2 Verification scale interval The verification scale interval e is determined by the expression: $d < e \leq 10^{k} d$ (see table 5) $e = 10^{k}$ kg k being a positive or negative whole number, or zero. Table 5: The values of e, calculated following this rule, are, for example: d = 0.1 g 0.2 g 0.5 g e = 1 g 1 g 1 g e = 10 d 5 d 2 d This requirement does not apply to an instrument of class (I) with d < 1 mg, where e = 1 mg, for example: d = 0.01 mg 0.02 mg 0.05 mg e = 1 mg 1 mg 1 mg e = 100 d 50 d 20 d	P+ P+ But reference to "tables 5a and 5b" (see below) P+ P+ In addition we suggest to add another column to table 5b: d = < 0.01 mg / e = 1 mg / e > 100 d
3.9.1.2	US	Delete "anyway" as follows: Class (I) instruments must be fitted with a levelling device and a level indicator but need not be tested, because these instruments require special environmental and installation conditions and skilled operating staff ~~anyway~~.	P+
3.9.5	US	2nd paragraph "Note." The U.S. agrees with the NL comments that the paragraph could be confused as a strict requirement. Since all instruments shall comply with clauses 3 and 4 installed in customary and suitable locations, the U.S. recommends deleting the examples from the note as follows:	P+ See our response to 3.9.5 CA

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		Note: Instruments installed outdoors without suitable protection against atmospheric conditions may normally not comply with the requirements of clauses 3 and 4 if the number of verification scale intervals n is relatively great. (~~In general, a value of n = 3 000 should not be exceeded. Furthermore for road or rail weighbridges the verification scale interval should not be less than 10 kg).~~ These requirements ~~limits~~ should also apply to each weighing range of combinations of instruments or of multiple range instruments or to each partial weighing range of multi-interval instruments.	
3.10.4.4	US	The paragraphs should be formatted to list the examples of other metrologically relevant and non-relevant features similar to 3.10.4.5 Summary of Metrological Characteristics.	P+ see 2CD
4.1.1.3	US	There is a missing period in the next to the last paragraph.	P+
4.1.2.4	US	"National legislation may specify the ~~sealing~~ securing that is required." The word sealing should now be replaced by securing to remain consistent with the other sections.	P+ yes, see 4.1.2.4 CA above
4.6.12	US	The U.S. recommends that an example should be included for a multiple range instrument with tare weighing or preset tare where e_1 would be rounded to zero in e_2 or e_3 to comply with 4.7.1. and proposed footnote 3 below. Lack of clarification as to the proper rounding of tare has resulted in conflicting opinions regarding rounding tare to zero. Are these instruments required to round up to the nearest e to avoid sales by gross weight? ***Possible example:*** 4.6.12.X Multiple range instrument with a tare-weighing device Specifications of the instrument: Class III, Max_1 = 60 kg, e_1 = 10 g Max_2 = 300 kg e_2 = 100 g Max_3 = 500 kg e_3 = 500 g Unloaded instrument,indicated value in weighing range (WR) 1 = WR1 0,000 kg	P- We think the example in 4.6.12.3 is sufficient. No, in any case the rounding shall be correct. For example: If e = 10 g, an internal value of 0,444 kg shall be rounded to 0,440 kg and internal value of 0,445 kg shall be rounded to 0,450 kg. (Your example is printed in correct format at the last page of this summary)

No. of R76-1	Country	Comments	Response of TC9/SC1 Secretariat
		Loading with tare load, internal value = 0,448 kg, rounded and indicated value = WR1 0,450 kg [1]) After releasing tare-balancing, indicated net value = WR1 0,000 kg Net Loading with net load, internal value = 312,753 kg, rounded and indicated net value = WR3313,000 kgNet [1 2])) *with automatic change over to weighing range 2, the tare-weighing value shall be rounded to the actual e of weighing range 3,* rounded tare-weighing value = WR3 0,000g [2 3])) Total loading, internal value = 313,201 kg rounded and indicated (if possible) gross value = WR2 213,000 kg [1 2])) Possible printouts acc. to 4.6.11: a) 313,000 kg B (or G)313,000 kg N 0,000 kg T [2 4])) b) 313,000 kg 313,000 kg N 0,000 kg T [2 4])) c) 313,000 kg N 0,000 kg T [2]) d) 313,000 kg N [2]) e) 313,000 kg) **(*Note:* A 0.15 percent overregistration of the net weight is introduced if tare is permitted to round to zero)** ***An example of the same instrument with a required minimum tare of 1 e (tare is prohibited from rounding to zero)*** Loading with tare load, internal value = 0,448 kg, rounded and indicated value = WR1 0,450 kg [1]) After releasing tare-balancing, indicated net value = WR1 0,000 kg Net Loading with net load, internal value = 312,753 kg, rounded and indicated net value = WR3312,500 kgNet [1 2]))	Your proposal corresponds with ours in 4.6.12.3, but in our example the tare value is not close to zero. However, the way of rounding in your proposal shall be the same as in 4.6.12.3. The indicated tare value in WR1 = 0,450 kg shall be rounded correctly to WR3 = 0,500 kg – not to 0,000 kg. But if WR1 = 0,240 kg then the rounding shall be WR3 = 0,000 kg. Your example would not be correct in the sense of R76. The correct values would be: Tare load = 0,448 kg indication WR1 0,450kg Tare balancing indication WR1 0,000kg Net load = 312,753 kg, indication WR3 313,000kg Net Total load = 313,201kg

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		with automatic change over to weighing range 2, the tare-weighing value shall be rounded to the actual e of weighing range 3, rounded tare-weighing value = WR3 0,500g [2] [3])) Total loading, internal value = 313,201 kg rounded and indicated (if possible) gross value = WR2 212,500 kg [1] [2])) Possible printouts acc. to 4.6.11:a)313,000 kg B (or G)312,500 kg N0,500kg T [2] [4]))b) 313,000 kg 312,500 kg N 0,500 kg T [2] [4])) c) 312,500 kg N 0,500 kg T [2]) d) 312,500 kg N [2]) e) 312,500 kg [2]) **(*Note:* A 0.08 percent underregistration of the net weight is introduced if a minimum of 1 e tare is required to comply with net weight laws and regulations)** Footnote 3: There is an extra "in" ***(. . . which is in ~~in~~ operation.)***	Gross (if displayable) indication WR3 313,000kg Printouts: a) 313,000kg B (or G) N 313,000kg N 0,500kg T This seems to be a mathematical contradiction, but all three weighing values (tare, net and gross) are correct rounded and within their mpe. A way out may be to distinguish one value as calculated value, e.g. "C 312,500kg B" Conclusion: No change because the example in 4.6.2.3 is sufficient and further examples will enlarge the R76 too much. P+
4.6.12.6	US	This example does not appear to correspond with the definition of the term T.5.3.2 Calculated weight value since the tare value in the example is not identified as a preset tare as a possible printout.	P+ See new example in 2CD
4.7.1	US	U.S. manufacturers have recently reported that rounding of tare weighing results are inconsistently applied when a tare weighing result is stored into a temporary memory while the operator is working with more than one customer at a time (e.g. vehicle weighing applications). One issuing authority stated that the tare weighing result became a preset tare since it was stored into a temporary memory location while the vehicle was being loaded and therefore rounded to the nearest scale division. During the time the vehicle is loaded, the operator can weigh other vehicles (this is called a weigh-in/weigh-out procedure in the U.S.). A different issuing authority	

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		stated that the tare value should remain stored to the internal resolution of the instrument since tare was determined on a tare weighing device. The U.S. agrees that a predetermined tare introduced into an instrument by means such as keystroke, code, and stored in memory for multiple transactions should be considered a preset tare value and rounded to the value of the scale division. The U.S. also agrees that a net weight can be calculated as the difference the gross and tare weights taken to the internal resolution of the instrument. However, we do not understand the reason for the rounding of tare weighing results that are automatically entered into a temporary memory, along with other customer and transaction information, when no rounding is required for price computing instruments. The U.S. recommends that tare weighing values automatically entered into a memory device should not be considered as preset tare values and requests that the Secretariat and the members of TC9/SC1 consider renumbering and amending sub clause 4.14.4.3 as follows: ~~4.14.4.3~~ 4.20 Multi-vendor or multiple customer operation *) An instrument may be designed to be used by more than one vendor or to serve more than one customer at the same time, provided that the connection between the transactions and the relevant vendor or customer is appropriately identified. An instrument may perform this additional function only if all transactions performed by the instrument or by connected peripherals are printed on a ticket or label intended for the customer. This function shall not lead to confusion about the results of weighing and transaction. *(Note: Paraphrased from 4.14.4 Special applications of a price computing instrument)* *) 4.7.1 does not apply to tare weighing values in these instruments.	P- We think that there is as a misunderstanding of the preset tare function; therefore we tried to improve the terminology in T.5.3.1, and we hope that this solves the problem. We cannot, however, agree with the suggested amendment of 4.14.4.3 / renumbering into 4.20, because for such a significant change the support of TC9/SC1 members is unlikely.
4.7.2	US	Typographical error in the last sentence. Preset tare devices may operate automatically ~~only~~ only if the . . .	P+

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4.14.4.3	US	U.S. manufacturers have recently reported that rounding of tare weighing results are inconsistently applied when a tare weighing result is stored into a temporary memory while the operator is working with more than one customer at a time (e.g. vehicle weighing applications). One issuing authority stated that the tare weighing result became a preset tare since it was stored into a temporary memory location while the vehicle was being loaded and therefore rounded to the nearest scale division. During the time the vehicle is loaded, the operator can weigh other vehicles (this is called a weigh-in/weigh-out procedure in the U.S.). A different issuing authority stated that the tare value should remain stored to the internal resolution of the instrument since tare was determined on a tare weighing device. The U.S. agrees that a predetermined tare introduced into an instrument by means such as keystroke, code, and stored in memory for multiple transactions should be considered a preset tare value and rounded to the value of the scale division. The U.S. also agrees that a net weight can be calculated as the difference the gross and tare weights taken to the internal resolution of the instrument. However, we do not understand the reason for the rounding of tare weighing results that are automatically entered into a temporary memory, along with other customer and transaction information, when no rounding is required for price computing instruments. The U.S. recommends that tare weighing values automatically entered into a memory device should not be considered as preset tare values and requests that the Secretariat and the members of TC9/SC1 consider renumbering and amending sub clause 4.14.4.3 as follows: ~~4.14.4.3~~ 4.20 Multi-vendor or multiple customer operation *) An instrument may be designed to be used by more than one vendor or to serve more than one customer at the same time, provided that the connection between the transactions and the relevant vendor or customer is appropriately identified.	P- See our response to 4.7.1 US

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		An instrument may perform this additional function only if all transactions performed by the instrument or by connected peripherals are printed on a ticket or label intended for the customer. This function shall not lead to confusion about the results of weighing and transaction. *(Note: Paraphrased from 4.14.4 Special applications of a price computing instrument)* *) 4.7.1 does not apply to tare weighing values in these instruments.	P+ Instead of paraphrasing 4.14.4 we think, however, a simple reference to 4.14.4 could be sufficient, see 2CD.
7.1.2	US	H): Typographical error in the first bullet: - maximum safe load in the form of Lim = . . . (if the manufacturer ~~b~~has provided for a maximum safe load of more than Max + T)	P+
7.1.4	US	The U.S. recommends that; - the presentation of 7.1.3 Additional markings, - the identification mark on separate but associated units, and - the presentation of special limits should be listed as acceptable software solutions to physical markings. The U.S. is unaware of any technical justification why the markings in 7.1.2. E (identification mark if separate but associated units), F (approval mark), and H (special limits) may not be displayed in lieu of physical markings. Except for the additional markings in 7.1.3, customers in direct sale transactions have no need to view the markings in E, F, and H. Additionally, the U.S. believes that the should not be required to be "simultaneously displayed." The language should permit the presentations of markings to be scrolled or menu driven. As an alternative all applicable markings in B, E, F, G, and H may be ~~simultaneously~~ displayed by a software solution either permanently or on manual command. In this case the markings are considered as device-specific parameters (see T.2.8.4, 4.1.2.4 and 5.5). Additional markings in 7.1.3 may be simultaneously displayed by a software solution as an	P- We do not think that we get worldwide acceptance of your proposal. However, we hope that the new wording (see 7.1.4 UK above) is an acceptable compromise for you.

No. of R76-1	Country	Comments	Response of TC9/SC1 Secretariat
		alternative to physical markings. An alternate proposal would be to recognize that the markings in E, F, H, and also D (serial number) could be provided by a software solution in the event that the markings are not located in a clearly visible location (e.g. under an easily removable load receptor, bottom of the instrument, etc.). Peripheral devices should not be held to the same marking visibility and grouping requirements in 7.1.4 as weighing instruments, main devices, modules, and other legally relevant devices. The examples of peripheral devices in T.2.3.5 are not manufactured with the intent that they be used exclusively or predominantly as a part of a measuring instrument or module. Their markings are not always located together or as clearly visible as they are for weighing instruments. For example, video displays, PC computers, and printers may have the name of the manufacturer on the front of the device with the type designation, serial number, and other information including (i.e., CE, FCC, UL, etc.) located on the back or bottom of the device. The U.S. recommends that the language in 7.1.4 be amended as follows to clarify that peripheral devices do not have the same visibility and grouping marking requirements as weighing instruments as follows: The descriptive markings shall be indelible and of a size, shape and clarity allowing easy reading. Except for the markings required for peripheral devices in 7.1.5.4, the descriptive markings ~~They~~ shall be grouped in one or two clearly visible places either on a plate or sticker fixed permanently to the instrument, or on a non-removable part of the instrument itself. In case of a plate or sticker which is not destroyed when removed, a means of securing shall be provided, e.g. a control mark that can be applied.	P- We think it is useful to have the information as far as possible grouped together. We do not see any practical problem to realise that.

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C.1	US	The U.S. recommends that the list of applicable requirements include 4.5.1. Maximum effect (of range of the initial zero setting device).	P- No change, 4.5.1 is included in "4.5"
C.3.3.1	US	Typographical error: C.3.3.1 Scope Indicators intended for connection of strain gauge load cells employ the 4- or the 6-wire principle of the load cell connection. When 4-wire technology is used, lengthening ~~cable~~ the load cell cable or using a separate load cell junction box with an extra cable is not allowed at all. . .	P+
E.1	US	Insert the word "the" at the beginning of the sentence as follows: The ~~F~~following metrological and technical data of the weighing instrument are necessary for the check of compatibility:	P+
E.3	US	There is no compatibility check for IZSR between separately tested indicators and weighing instruments (combination of load cell and connecting elements). The IZSR of the separable indicator may be configured so that it is larger than the IZSR of the weighing instrument.	P- See A.4.2.1.1